Review of the proposal on "JINR participation in COMET experiment"

Charged-lepton flavour-violating (CLFV) processes are considered as high sensitivity probes for new physics and COMET (COherent Muon to Electron Transition) experiment at J-PARC is aimed at search for the coherent neutrinoless conversion of a muon into an electron in the field of an aluminum nucleus $\mu^- N \rightarrow e^- N$ with a very clear experimental signature – emission of a mono-energetic electron at low level of the beam background.

Successful participation of the JINR scientists in the COMET project has a long record. They have produced and tested all 9.8 mm straw tubes for the first stage of the detector construction and all 5 mm straw tubes for second phase. The JINR group made significant contribution to simulation and development of various detector systems, including straw-tracker, electromagnetic calorimeter and Cosmic Ray Veto (CRV) system.

Furthermore, the group was elected as coordinator for the straw tracker system manufacturing, its tests and assemblying. Also, JINR takes full responsibility for development and optimization of a crystal calibration method for the calorimeter to be used in COMET Phase I and Phase-II, for assembling, testing, installation and operation of the calorimeter, and for certification of crystals while leading the R&D work.

The JINR group made significant contribution in R&D program to create a cosmic veto system bearing responsibility in the assembly, testing and installation of the CRV for Phase-I (a member of the JINR group was elected as the COMET-CRV leader).

These achievements as well as the group plans for further participation in the COMET experiment were appreciated at the PAC PP session this January. The PAC recommended continuation of the project for the period of 2024-2026 with category A.

Most investment in realization of the project have been done and resources requested for fulfilment of the commitments are adequate. I fully support the JINR participation in the COMET experiment for 2024-2026.

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